Q&A

PATENTS

Wolf Greenfield

SPECIALISTS IN INTELLECTUAL PROPERTY LAW

QUESTIONS AND ANSWERS

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PATENT BASICS

What is a patent?

A patent is a legal document that gives the owner the right to prevent others from practicing an invention as it is claimed in the patent. A patent contains a written description of the invention and one or more claims that define the patent rights. Each claim is a single sentence that describes a patentable aspect or embodiment of the invention.

What rights does a patent owner have?

A U.S. patent allows the patent owner to prevent others from making, using, selling, offering for sale, or importing an invention as it is claimed in the patent, in the U.S. or its territories.

A commonly misunderstood fact, however, is that a U.S. patent does not give the patent owner the right to practice the claimed invention. That right depends on whether practicing the claimed invention would infringe a claim of another patent owned by another party, which can occur since different aspects of an invention may be claimed in different patents owned by different parties.

What can be patented?

In the U.S., there are three categories of patents: utility patents, design patents, and plant patents. Utility patents—the main subject of this booklet—protect functional aspects of inventions such as machines, manufactured articles, compositions of matter, and processes. Design patents protect the appearance and nonfunctional design of manufactured articles such as furniture, computers, clothing, and vehicles. Plant patents protect distinct varieties of asexually reproduced fruits, vegetables, and flowers.

Similar patents can be obtained outside the U.S. However, there are national and regional differences that impact the patentability of some technologies in different countries.

How are patents obtained?

In the U.S., a patent is issued by the U.S. Patent and Trademark Office ("USPTO") based on a patent application submitted for examination. During the examination process, a patent examiner (USPTO employee who reviews and allows/rejects applications) determines the scope of allowable "claims," which define the protection sought. These claims are then issued in a patent. A patent is rarely issued in under two years, and often takes longer to issue, but the process can be expedited in certain situations. Before a patent issues, the terms "patent pending" and "patent applied for" can be used on commercial products to inform the public that a particular product is the subject matter of a patent application. However, there are penalties for improper use of these terms.

How long do patents last?

Utility patents have a term of 20 years from the "effective filing date" of the patent application under most circumstances. Design patents last 14 years from the issue date, and plant patents last 20 years from the application filing date. A patent will expire earlier if its owner fails to pay the required government maintenance fees or if a patent is declared invalid in an administrative procedure at the USPTO or in a lawsuit.

Who owns a patent?

In most states, inventors own their inventions unless they give their rights away by contract or by being employed to invent. To determine whether an inventor or his/her employer owns an invention, state law and employment circumstances must be considered, as they may impose a default "agreement."

Most companies require employees to assign any inventions connected to their employment to the company. Most academic institutions require faculty to assign inventions to the institution if the invention involved the substantial use of the institution's resources (such as expensive laboratory equipment). In return, such institutions typically commit resources to patent and license the inventions and share income from the inventions with the inventors and their departments.

How do patent owners exercise their patent rights?

A patent owner can prevent others from practicing a claimed invention by suing them in a U.S. federal court. Alternatively, a patent owner can license patent rights to others on agreed upon terms. Under most circumstances, a patent owner also can sell a patent to others.

A patent should be viewed as a business asset used for fundraising, to generate revenue through licensing, as leverage in a negotiation, or to exclude potential competitors from a particular market or industry for a period of time.

A small company can also use one or more patents covering a core industry technology to compete effectively with larger companies. Patents are valuable assets for any company or organization if they cover commercial aspects of a technology.

Why should I consult a patent attorney?

This booklet covers some—but certainly not all—areas of patent protection, and you can find additional information on the USPTO website (www.uspto.gov) and through other resources. However, an attorney should be consulted to protect your inventions. Taking the wrong actions when seeking patent protection, or when enforcing or exploiting an issued patent, could ultimately jeopardize your rights as a patent owner and your chances for winning a patent dispute. Patent litigation counsel should be sought before taking any action including contacting someone that you suspect of infringing your patent.

EVALUATING PATENTABILITY

What is required for an invention to be patentable?

The first hurdle for an invention is to qualify as "statutory subject matter," meaning it must be one of the following:

- A new and useful process (example: new method of converting biological material into fuel);
- A new and useful machine (example: new type of wireless device);
- A new and useful manufacture (example: new type of snowboard);
- A new and useful composition of matter (example: new chemical formula or pharmaceutical formulation); or
- A new and useful improvement of any of the above.

An invention also must satisfy additional requirements, and these vary for the different patent types. For example, for a utility patent, a claim must be directed to a useful, novel, and "nonobvious" subject matter.

Usefulness is typically challenged by the USPTO only when the utility or effectiveness of an invention is questionable. This means patents may be granted even for humorous inventions—as long as they work. To be "novel," an invention must be different from whatever is already publicly known or available (called "prior art"). An invention is considered nonobvious if, at the time of the invention, it was not obvious to a person of "ordinary skill" in the inventor's field. A determination of nonobviousness is based on a legal analysis of the prior art in view of additional factors.

How should I evaluate the patentability of my technology?

You should consult an attorney to help you evaluate the patentability of a technology that is important to you or your company. A search for prior art using both scientific and patent databases can be useful. Your patent attorney can assist you or perform an independent search.

Once the most relevant prior art has been identified, your patent attorney can help you identify patentable inventions that may be claimed. For example, determining the obviousness of a technology can involve a complex legal evaluation.

It is common for inventors to believe much of their work is obvious. However, an invention is probably not obvious if it solves a problem others attempted—but failed—to solve, if an invention yields surprising, unexpected results, or if the inventor's work lay in the discovery of an unidentified problem, even if the solution was trivial once the problem was discovered. Events occurring years after the invention was made can influence the determination of nonobviousness, such as commercial success of the invention or copying of the invention by others. You also can obtain a patentability opinion from your patent attorney, which is a report that evaluates the likelihood of obtaining a patent in view of published references that are identified.

Are some inventions not patentable?

Yes. Common examples that cannot be patented include mathematical formulae or theoretical phenomena, laws of nature, naturally occurring substances in their naturally occurring environment, choreographed dance routines (or other processes provided by human motor coordination), and anything used for illegal purposes.

CONSIDERATIONS BEFORE FILING A PATENT

If I have an invention, do I have to get a patent to make and sell it?

No. A patent is not a prerequisite to the commercialization of an invention and, as explained above, a patent does not give the patent owner the right to make and sell the invention.

If I have never seen an invention before on the market, can I get a patent to the invention?

Not necessarily. The patentability of an invention in the U.S. depends on various factors, only one of which is whether it has or has not been on the market.

Can I get a patent on a product that I or my company conceived many years ago but never made or patented?

Possibly, but possibly not. By delaying when you file a patent application, your rights may be forfeited. The activities of the inventor/company as well as those of third parties can negate patentability.

What should I do to protect my rights prior to filing a patent application?

You should keep information about the invention secret until a patent application is filed. Patent rights (including international rights) may be lost if public disclosures are made prior to filing a patent application. Confidentiality agreements should be executed by all persons, including employees, outside contractors, and joint development partners, to whom information about the invention is disclosed. It is particularly important to inform sales personnel about the need for non-disclosure of an invention until a patent application is filed.

What records should I keep when developing an invention?

When you or your scientists first conceive of an invention, you should immediately describe it in a written document (with drawings if possible) which is witnessed, in confidence, by someone who can later corroborate it. After conception, careful dated records should be kept to document activities that reduce the invention to a working prototype (referred to as "reduction to practice").

Although patent validity is based upon a "first-inventor-to-file" basis, records of invention can still be valuable in demonstrating ownership of an invention and possibly even in later "derivation" proceedings.

Laboratory notebooks, whether paper or electronic, are a key element of record keeping, and there are requirements to ensure they are properly filled out and kept secure. A patent attorney can assist in developing a record keeping procedure and structure tailored to your business and industry.

What if I haven't made a working prototype or example of my invention?

Although there is no requirement of a working model to apply for a patent, the application must describe a process, product or composition with sufficient detail to enable someone else to make it in a way that will work.

In "unpredictable" fields such as chemistry and biotechnology, it is often desirable to test an invention sufficiently to confirm its operability. Otherwise, the patent application may be found to be defective.

What is a public disclosure that might bar obtaining a patent?

In many countries, a patent application cannot be filed after a public disclosure of the invention that describes the invention in enough detail to reproduce it. A scholarly paper certainly can be a public disclosure. Although grant applications typically are not made public, grant final reports can be available to the public and could bar obtaining a patent. If a department seminar is open to the public, then disclosure of an invention during that seminar could be a bar to obtaining protection in some countries, including most European countries. A biological or sequence deposit can be a disclosure of your invention if the deposit is unrestricted.

Other writings and even oral presentations may be public disclosures too. For some countries, a nonconfidential disclosure of your invention to even a single individual can be a bar to obtaining a patent.

How reliable are searches to identify public disclosures?

A careful search of relevant databases, including USPTO records, is a good—but not certain—test of patentability. Because a patent application may be rejected on any evidence that the invention was previously disclosed or obvious, it is always possible that relevant information exists in forms not available through the database or USPTO searches.

How do I avoid jeopardizing my patent rights?

If you or one of your scientists has an idea that may be patentable, contact a patent attorney for advice on how or whether to proceed. If you work at a university or research institution, contact your licensing office to get the advice you need to protect your inventions.

Will the preparation of a patent application take a lot of the inventor's time?

The involvement required of an inventor depends on the role of the inventor in the patent drafting process. A patent attorney needs the inventor to explain the invention and background information and review the patent application prior to filing. It is a patent attorney's responsibility to quickly assimilate the information from the inventor, define the invention in a manner that distinguishes it from prior technology, and prepare the patent application. However, an inventor can contribute to this drafting process too.

What should I take to an initial interview with my patent attorney?

You should provide a complete written record of the invention, detailing as many aspects as possible. Drawings can be included, if appropriate. If your invention is complex and the description involves a great deal of material, you may also prepare a summary for ease in explaining the general outline of your invention. Lastly, bring any information you have that identifies the prior art and the problem(s) you were intending to solve.

THE PATENT APPLICATION

What is a patent application?

A patent application is a detailed document that describes your invention and is filed with the USPTO under strict procedural rules. The application includes a "specification" that has two major parts:

- The claims that define the scope of legal rights; and
- A description that supports the claims by describing and defining the invention.

A complete application also requires a government filing fee and a written declaration from the inventors attesting to the invention. These may be submitted after the specification.

How is the specification organized?

The specification includes the following sections:

- A brief but descriptive title;
- The background of the invention;
- A summary of what the invention can do, what problem it solves, or what use it has;
- A description of the invention's structural and functional components, with sufficient detail for a person of ordinary skill in the field to make and use the invention;
- The "claim(s)," which are numbered sentences defining the protection sought; and
- Supporting drawings, if necessary, to illustrate aspects of the invention (particularly if the invention is a structure or machine).

Why are patent claims so important?

A patent's scope is defined by its claims, which are analogous to a deed of real estate defining property lines others may not cross. A claim of a patent defines subject matter that others can be prevented from practicing (subject matter that would "infringe" the claim).

A product or process infringes a claim only if each element of the claim, or its equivalent, is found in the product or process. Determining the precise scope of a claim typically involves a complex legal analysis of many factual considerations in view of legal standards developed through years of court cases. Because of this, it is advisable to consult a qualified patent attorney to ensure the claims of the patent application have the appropriate scope.

Why should a patent have more than one patent claim?

Different claims can provide different types and levels of protection, and can catch different potential infringers of the patent. For example, a patent may have claims directed to a product, a method for making the product, or the method of using the product. A varied claim strategy is often advisable rather than relying on a single claim.

What is a "provisional" patent application?

A provisional patent application is a type of patent application that is not examined by the patent office, does not itself get granted as a patent, and does not need to comply with all the formalities imposed on regular utility (or "non-provisional") patent applications. For example, a provisional application does not require claims or signatory

documents and carries a reduced government filing fee. It is automatically abandoned at the end of one year, by which time a regular utility application that "claims priority" (claims the benefit of the provisional application's filing date) must be filed. The intended purpose of a provisional application is to provide a faster, less expensive way to secure an initial filing date. However, to secure an initial filing date, a provisional application must meet all of the statutory requirements of a non-provisional patent application, including an adequate disclosure of the invention.

A provisional application does not initiate the 20 year patent term, so it may effectively extend the patent term one year while it delays examination (and associated costs). This may be particularly beneficial in the biotechnology and chemistry fields. However, if you need to obtain a patent as quickly as possible, a regular utility application, rather than a provisional, should be filed.

In general, filing a provisional application is a good idea when there is insufficient time to prepare a formal application (such as the day before a problematic public disclosure). However, if a provisional application is not written carefully enough to support the claims ultimately desired, its filing date cannot be relied upon as the effective date for those claims and may create a false sense of security. The decision to file a provisional application should be made only after careful consultation with patent counsel.

PATENT PROSECUTION

What is "patent prosecution"?

In the patent world, the term "prosecution" refers to the entire patent process, from the drafting of the patent application until it is allowed and issued, or finally rejected, by the USPTO. You may hear someone refer to the fact he/she is "prosecuting a patent before the USPTO."

What are the steps in getting a patent?

Typically, a patent attorney works closely with the inventor(s) to define the invention, making sure it meets the requirements for patentability, and determining the best mode for practicing the invention. The attorney may conduct a prior art search and then prepares and files the application in the required USPTO format.

After a patent application is submitted to the USPTO, it receives a serial number and is reviewed initially to identify any defects relating to the declaration, drawings, nucleic acid or protein sequence submissions, or other formal matters. After any informalities are corrected, the application is assigned to a patent examiner for review. The examiner reviews the claims of the application and issues a first "Office Action," which may take one of various forms.

For example, the first Office Action may be a "Restriction Requirement" if the examiner determines the application claims more than one invention. In response, an applicant may object to the Restriction Requirement, but must elect claims related to one of the inventions identified by the examiner for further examination.

The examiner then reviews the elected claims and issues the next Office Action, which evaluates the claims in view of the prior art and the supporting description in the application. The Office Action usually contains rejections of some or all of the claims based on the examiner's view of the prior art and/or any perceived lack of written description or enablement for the claims in the specification. It is rare for all the claims to be initially allowed as filed.

What typically follows are one or more exchanges of written communications—responses and further Office Actions—during which the applicant can amend the claims and submit arguments to support patentability. An applicant can also schedule an interview with the examiner, either by telephone or in person, to explain the invention and address the rejections made by the examiner. The USPTO will consider a limited number of responses and may or may not modify its position with respect to all or a subset of the claims. These responses are typically prepared and filed by the attorney after consultation with the inventor(s).

A patent is issued if the claims are found allowable and the applicant pays the required fee.

What if the USPTO rejects my patent application?

If you receive a final rejection, you can appeal to the Patent Office Board of Appeals, a three-member board that reviews the examiner's decision and considers arguments in favor of patentability. If that decision is adverse, you can appeal to the Court of Appeals for the Federal Circuit (the federal appeals court that hears all intellectual property cases) or to a U.S. district court.

After a final rejection from the USPTO, you can also elect to continue prosecution by using different approaches.

How long does it take to obtain a patent?

The timing of patent prosecution can vary significantly depending on the number of communications with the examiner. The goal of the USPTO is to issue the first Office Action within 14 months of the application filing date, and subsequent Office Actions within four months of each response submitted by the applicant. However, these times are often longer due to a backlog of applications at the USPTO.

The extent of delay can be affected by the nature of the invention due to varied workload levels in different technology areas at the USPTO. The issuance of a patent can be further delayed if the applicant decides to appeal a final decision relating to some or all of the claims. The appeal process can last for several years.

In some instances, the examination process can be expedited such that a patent may be issued within a year from its filing date. If such expedited processing is of interest, you should consult your patent attorney to determine what steps should be taken.

If only some of my claims are allowed, can I pursue others?

Yes, you can obtain a patent on a subset of claims that are allowed and pursue rejected claims in a related later-filed application, provided it is filed before the allowed claims issue. The later-filed application is referred to as either a divisional or a continuation of the initial application.

What is the "priority date" of a patent application?

An application's priority date is the date it was submitted to the USPTO or, if an application claims priority to one or more earlier-filed applications, its priority date is the filing date of the earliest application to which priority can be correctly claimed. The priority date is significant, in part, because it is the date used to establish what prior art is considered in determining an invention's patentability.

If I abandon a patent application before it issues, can I reinstate it later?

If you have abandoned an application intentionally, your application is considered abandoned and cannot be resurrected. An application can only be resurrected if it went abandoned due to an unintentional or unavoidable failure to respond to a USPTO communication or pay a fee in a timely manner. Under some circumstances, claims in an abandoned application may be pursued in a related application.

Who is an inventor?

This is a complex legal question. An inventor is someone who contributes to the conception of an invention. The contribution must be more than routine engineering skills, supervision, and/or reduction to practice of an invention. Conception is the formation in an inventor's mind of a definite idea of the invention and an operative means for making and using it. Reduction to practice is the successful building of an operative embodiment of the invention. Someone who merely defines an end result to be achieved is not an inventor, nor is someone who only assembles or conducts routine experimentation as the invention is refined.

For software-related inventions, an inventor typically is someone who contributed to the specification of the software architecture and operation. An individual who writes a program using standard programming techniques to meet a specification defined by another is probably not an inventor. A project manager will not be an inventor if he/she only participates in business decisions in the development process. A software engineer or system architect typically determines the architecture and operation of the software, including its data structures, flow, and algorithms, and is often an inventor.

Because the misnaming of inventors may render a patent invalid and unenforceable, inventorship questions should be resolved in consultation with patent counsel.

Who owns the patent if there are multiple inventors?

If an invention is properly a joint invention, the USPTO will issue a patent in the name of two or more inventors. Each inventor has full rights in the invention—regardless of relative contribution—except that no inventor alone can grant an exclusive right to a third party. Because problems can arise with co-owners, it is advisable to prepare an ownership agreement prior to any collaborative effort between inventors, especially those working for different businesses or organizations.

Can I patent an invention financed by federal funds?

Yes. In 1980, Congress passed a law that allows institutions to own inventions made by their faculty but financed with public funds. The federal government passed this law to provide an incentive to transfer technology from government supported research to the public. Companies also can obtain patents on inventions made with federal funding. However, to retain rights in an invention funded by federal grants, an institution or company must comply with reporting requirements to the relevant federal agency.

Does the USPTO keep patent applications secret while they are pending?

All utility patent applications filed after November 29, 2000 are published—and available to the public—18 months after the priority date (in some cases earlier) unless the applicant requests non-publication and agrees not to file any foreign applications. Non-published patent applications are maintained in the strictest confidence until the patent issues.

How much does a patent cost?

The costs of preparing a patent application vary widely with the nature of the invention, the type of application, and the scope of claims being sought. Costs are affected by the amount of prior art searching and analysis required, the amount of input needed from inventors, and whether there is protracted prosecution and appeals.

Patent applications are technical documents that must meet demanding legal standards and also must fully disclose the invention for which a patent is sought. Costs include searching costs, attorneys' fees, government filing costs, and the expenses related to preparing drawings. Other special costs may also be incurred, depending on the invention's particular situation.

Your patent counsel can generally provide a cost estimate based on your specific situation.

INTERNATIONAL PATENT PROTECTION

Does a U.S. patent cover my invention internationally?

No. In fact, the scope and term of patent protection may vary from country to country. A U.S. patent controls only the manufacture, use, and sale of products within the U.S. (including its territories). If a product is made in another country and exported to the U.S., a U.S. patent will apply to the product once it is in the U.S. Similarly, if a patent covers a method for making a product, the use or sale of a product made by that method in the U.S. is covered.

What are some considerations when filing for patents in other countries?

The laws in other countries vary but, in general, you must file a patent application before any public use or sale of your invention. International patent protection is complicated and expensive and should only be sought in those countries in which a patent makes commercial sense and for inventions that are commercially significant.

Two international treaties play important roles in international patents. Under the first treaty—the Paris Convention—a patent application filed in a member country is treated as if filed on the same date as the applicant's first application in any other member country, so long as the later-filed application is filed within one year of the first filed application. The U.S. and most industrialized countries are members of this convention. This treaty is extremely useful to a U.S. applicant who can file an application in the U.S. before disclosing the invention, and then has one year from the U.S. filing date to file internationally.

Another treaty, known as the Patent Cooperation Treaty (or "PCT,") allows for streamlined filing of a single, international application covering over 184 countries. The PCT application provides an international prior art search and examination and delays the time in which decisions must be made (and major costs incurred) as to whether to file directly in each specific country.

AFTER THE PATENT ISSUES

How do I generate value from a patent or patent application?

An invention can be made, used, and sold before a patent is issued. However, an issued patent gives you or your company a competitive advantage by allowing you to prevent others from making, using, or selling the invention. Patent applications and issued patents can also be directly monetized by either licensing or selling them, for example, to another company or organization.

What types of licenses are typically used?

A license is an agreement to allow another party to practice a claimed invention in exchange for value, for example, a royalty payment. There are different types of licenses, each having advantages and disadvantages. An "exclusive" license can be used when only one manufacturer is—or ever would be—licensed to develop your invention. A "nonexclusive" license is used when you will be licensing to more than one licensee. For a more detailed look at licenses and IP agreements, see our booklet *Q&A on Licensing and Transactions*.

Can a patent be challenged after it has been issued?

Yes. Although a patent is presumed valid, most patent systems provide procedures to challenge a patent. It may be possible, for example, to file a lawsuit requesting invalidation of the patent.

In addition, in the U.S., there are multiple ways to challenge the validity of a patent before the USPTO, including *ex parte* reexamination, *inter partes* review, and post-grant review. There is also a specific procedure for challenging certain patents on business methods ("covered business method patent review"). All such procedures for challenging the validity of an issued patent are complex, and are described in more detail in our booklet *Q&A on Post Grant Proceedings.*

What is "patent infringement"?

Someone "infringes" your patent when the elements of their device or process match your patent's claims. In fact, if any one claim is infringed, the patent as a whole is infringed. To literally infringe a claim, each and every limitation of the claim must be met. The analysis proceeds word-by-word or clause-by-clause to see if each is met in an accused device or process. Even without an exact match between the claims in your patent and the accused device or process, infringement still may be found through the "doctrine of equivalents," which applies when the patented invention and the allegedly infringing device or process are sufficiently equivalent.

How do I know if I am at risk of being sued for patent infringement?

Assessing the likelihood of being sued can be complex and may require searches for and analysis of patents related to the existing or proposed product or process (comparable to the due diligence conducted when one company acquires another).

What should I do if someone is infringing my patent rights?

First, only an issued patent can be infringed. A patent application cannot be infringed. However, your published application may entitle you to collect a reasonable royalty for the period between publication and issuance of the patent under some circumstances.

If your patent is infringed, you can notify the infringer of the patent and demand that sales of the product stop. You may also offer to license your patent to the infringer. However, neither of these steps should be taken without consulting a patent attorney as these actions may provide the basis for the infringer to file a lawsuit in its own jurisdiction, obtaining "home court advantage."

You also could file suit in U.S. federal court for patent infringement before contacting an infringer. However, patent litigation should not be entered into lightly, as it can be expensive and disruptive to a business.

Patent disputes can be resolved through methods such as arbitration and mediation, which can be expensive. For a more in-depth discussion on these topics, see our booklet *Q&A on Intellectual Property Litigation.*

Other available Q&A Booklets:

Q&A on Intellectual Property Litigation

Q&A on Licensing and Transactions

Q&A on Post Grant Proceedings

Q&A on Trademarks and Copyrights

600 Atlantic Avenue, Boston, MA 02210-2206 Tel: 617.646.8000 Fax: 617.646.8646 www.wolfgreenfield.com